

CLAIMS

1. A multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body.
2. The multi-layered structure for fabricating an ohmic electrode according to claim 1 wherein said III-V compound semiconductor body comprises GaAs, AlGaAs or InGaAs.
3. The multi-layered structure for fabricating an ohmic electrode according to claim 1 wherein said non-single crystal semiconductor layer is a non-single crystal $\text{In}_x\text{Ga}_{1-x}\text{As}$ ($0 < x \leq 1$) layer.
4. The multi-layered structure for fabricating an ohmic electrode according to claim 1 wherein said film comprises a metal film and a metal nitride film provided on said metal film.
5. The multi-layered structure for fabricating an ohmic electrode according to claim 4 wherein a refractory metal film is further provided on said metal nitride film.

6. The multi-layered structure for fabricating an ohmic electrode according to claim 5 wherein a metal film for wiring is further provided on said refractory metal film.

7. The multi-layered structure for fabricating an ohmic electrode according to claim 4 wherein said metal film is a Ni film, a Co film or an Al film, and said metal nitride film is a WN film, a WSiN film, a TaN film, a TaSiN film, a TiN film, a TiSiN film or a TiON film.

8. The multi-layered structure for fabricating an ohmic electrode according to claim 5 wherein said refractory metal film is a W film, a Ta film or a Mo film.

9. A multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body,

the energy barrier between said non-single crystal semiconductor layer and said film being lower than the energy barrier between said III-V compound semiconductor body and said film.

10. An ohmic electrode obtained by annealing a multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body.

11. The ohmic electrode according to claim 10 wherein the annealing temperature of said multi-layered structure for fabricating an ohmic electrode is 500°C to 600°C.

12. The ohmic electrode according to claim 10 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said III-V compound semiconductor body comprises GaAs, AlGaAs or InGaAs.

13. The ohmic electrode according to claim 10 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said non-single crystal semiconductor layer is a non-single crystal $\text{In}_{1-x}\text{Ga}_x\text{As}$ ($0 < x \leq 1$) layer.

14. The ohmic electrode according to claim 10 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said film

comprises a metal film and a metal nitride film provided on said metal film.

15. The ohmic electrode according to claim 14 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which a refractory metal film is further provided on said metal nitride film.

16. The ohmic electrode according to claim 15 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which a metal film for wiring is provided on said refractory metal film.

17. The ohmic electrode according to claim 14 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said metal film is a Ni film, a Co film or an Al film, and said metal nitride film is a WN film, a WSiN film, a WSiN film, a TaN film, a TaSiN film, a TiN film, a TiSiN film or a TiON film.

18. The ohmic electrode according to claim 15 obtained by annealing said multi-layered structure for fabricating an ohmic electrode in which said refractory metal film is a W film, a Ta film or a Mo film.

19. An ohmic electrode provided on a III-V compound semiconductor body obtained by annealing a multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer and a film including at least a metal nitride film,

the energy barrier between said non-single crystal semiconductor layer and said film being lower than the energy barrier between said III-V compound semiconductor body and said film.